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May 2, 1997

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MAY 2 1997

Federal Communications Commission
Office of Secretary

Mr. William F. Caton
Acting Secretary
Federal Communications Commission
1919 M Street, NW
Room 222
Washington, DC 20554

Re: **Ex Parte Statement**
CC Docket 96-45

Dear Mr. Caton:

On April 29, 1997, Mr. Jeremy Bulow and Mr. Barry Nalebuff, Consultants to Ameritech, forwarded the attached information to Mr. Greg Rosston and Mr. Evan Kwerel of the Office of Plans and Policy as a follow-up to a meeting on March 19, 1997, during which time competitive bidding proposals were discussed. This information should be entered into the record of the above referenced proceeding.

Sincerely,

Celia Nogales

Attachment
cc: Greg Rosston
Evan Kwerel

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Dear Colleagues,

We are writing a follow-up to the ex-parte meeting in Washington on March 19 and in response to the recent emails sent by Professor Milgrom comparing the GTE plan with an alternative proposal suggested by Ameritech for consideration.

There are three points that we discuss below.

1. Fixed versus per-capita subsidies
2. Dividing the market between multiple COLRs
3. A technical response to Professor Milgrom's critique

1. FIXED VERSUS PER-CAPITA SHARES

Before we can compare a lump-sum with a per-subscriber subsidy, we need to be clear on the specifics of the subsidy. The discussion in Washington left us with some confusion as to how the per-capita subsidy would be done? One option would be for each COLR to get subsidy per subscriber signed up. That subsidy would be determined by the bidding in the auction. A similar-sounding, but quite different, option would be to restrict this per-subscriber subsidy only to those subscribers who sign up for some particular specified service as some pre-specified price. In particular, if the customer were to purchase an advanced set of telecommunication services then even a COLR provider would not get a subsidy for signing up this customer.

Our view is that the simple subsidy per-subsciber creates a seriously unlevel playing field between a COLR and non-COLR provider. The reason is obvious. The COLR can offer anything the non-COLR can offer and will make more money because it will be subsidized on each customer it gets. That subsidy would also allow it to profitably undercut any non-COLR provider.

The only time that this issue is moot is in the case where there is no viable non-COLR provider. For this to be true, the geographic region would have to be so small and so homogeneous that a non-COLR carrier would not be able to find any profitable customers to serve.

This issue is largely resolved if the subsidy is only given to a COLR provider when it signs up a customer to one of the pre-specified COLR plans. This would allow a non-COLR provider to offer a package with more services at a competitive price. Since the COLR loses the subsidy

when it offers its version of the full-service package, competition is fair. The COLR can't push the customer to stay with the basic (subsidized) COLR package by discounting its price, since the price of the COLR package was set as part of the program. Thus, there is a much more level playing field between COLR and non-COLR providers in the competition for profitable customers if the subsidy is restricted to a limited number of "COLR package offerings."

Of course, this creates a different distortion. People who are COLR customers will likely have less choice as to the range of services offered to them. COLR providers may not even offer the full range of products to these customers if it means losing the subsidy. That said, the underlying motivation for the COLR subsidy is universal service and the resulting network externalities. Ensuring that everyone has access to certain basic telecommunication service may go most of the way towards solving the network externality problem. This could also greatly reduce the cost of the subsidy since it will be limited only to the customer for whom it was intended. (One could counter that bidders in the COLR auction will make lower bids anticipating the fact that they will collect a subsidy on some non-COLR customers and thus use that subsidy to cross-subsdize the money-losing customers. The problem is that the COLR's market share of the profitable customers is quite uncertain at the time of bidding and thus conservatism may lead them to discount the value of the subsidy on what would otherwise be profitable customers.)

In any case, it should be clear from the above discussion that the choice between making the subsidy on a per-subscriber basis or a per-subscriber-of-COLR-packages will make a large difference in the nature of competition between COLR and no-COLR providers. In the choice between the two, we (Bulow and Nalebuff) would prefer to see the subsidies restricted to certain plans.

Our reading of the GTE plan has bidders receiving a subsidy per head for each customer they service within an auction block. If consumers are heterogeneous, then there will be an incentive to cherry pick. GTE aims to reduce heterogeneity by making markets very small. Still, one can expect there to be heterogeneity in either the cost of serving the customer or the value of serving them (based on their total demand). Given heterogeneity, there will be too little incentive for a COLR to serve a customer who is much more costly (or much less valuable) than the average in her mini-market. As for profitable customers who happen to live in areas that receive a COLR subsidy, non-COLR firms will be at a competitive disadvantage in competing for those customers. It is obvious why regulators would be forced to slice markets very finely, so that profitable and unprofitable customers would not both exist in a given market.

Given these problems arising from heterogeneity of customers, Ameritech suggested an alternative approach for consideration. The money-losing customers who would otherwise not be served become the direct responsibility of a particular COLR (which may engage in voluntary arrangements with other firms to provide for service to the customer). Then by awarding a fixed rather than a per capita subsidy, all firms, both COLRs and non-COLRs, can compete for the more profitable customers. In this way, there is no reason for the auction to resort to mini-markets.

There are substantial advantages to having larger auction markets, beyond the obvious one of administrative simplicity. The most obvious one has to do with market complementarities. As we know from the spectrum auctions, when large blocks (such as MTAs) are auctioned off, complementarities are likely to be quite minor. When smaller blocks are auctioned, as with the BTAs, complementarities start to become more important. The FCC is rightly concerned that as we look to auctions that involve smaller and smaller areas complementarities become more and more important. Auction approaches that offer fixed amount subsidies rather than per customer subsidies make larger markets more feasible. The alternative suggested by Ameritech has this advantage. Of course, other approaches including GTE's could be modified to move to fixed subsidies and larger auction market sizes. We think such a change would be a step in the right direction.

In summary, an advantage of the alternative approach suggested by Ameritech is that it avoids the "cherry picking" problems that plague the GTE plan and force GTE to hold an enormous number of auctions for tiny markets.

2. DIVIDING THE MARKET BETWEEN MULTIPLE COLRS

Professor Milgrom quite rightly suggests that we do not offer any reason to have a second COLR in the market. That is basically correct. We have designed an auction mechanism that allows for multiple COLRs for the simple reason that the law seems to require the possibility of multiple COLRs. Our general view is that one can not expect to have competition to provide service at a subsidized rate. If firms were allowed to charge the true cost of supply service, no COLR status would be required--although we suspect many people would end up without service. Although the subsidy is meant to entice providers to voluntarily provide service where they otherwise would not do so economically, if this subsidy is given out on a per-subscirber basis (regardless of service) this would give the COLR providers all the more incentive to go

after the customers would do not need to be subsidized and let the other COLR provider take the customers who really need a subsidy.

Even if the service area is small enough so that there are no profitable customers, absent the subsidy, some of the unprofitable customers will be less unprofitable than others. Again, the COLR provider will want to go after those who are the most profitable given the subsidy and turf the other customers to the rival. (If the subsidy is so large that all customers are profitable then we suspect the total cost of the program will be exponentially larger than anticipated.)

Since we are not convinced of the benefits of competition between COLR providers, we have not focussed on designing an auction that empathizes the competition between them. Instead, we have emphasized the benefits of competition between COLR and non-COLR providers. All that said, there is one reason why we might still want to have multiple COLRs. That is because the incumbent provider may have a large advantage in bidding the next time the auction is opened up. If we expect the COLR licenses to be re-auctioned then this auction will have more competition if there are multiple incumbent COLR providers.

There is one area of similarity between our proposals that is worth pointing out. The GTE plan has the option of bid withdrawals, while the alternative suggested by Ameritech has the option of bid matching. Ignoring for a moment the issue of how much the second bidder has to pay, there is no real difference between giving someone the option to match or giving them a license and then providing them with an option to withdraw. In effect, not matching is just like getting the license and then withdrawing.

That said, the two alternatives offer the option in just the reverse fashion. The Ameritech alternative gives the losing bidder the option of matching and becoming a second COLR provider. The GTE plan gives the lowest bidding—or the winning bidder--the first option of withdrawal. The motivation behind the GTE approach is backward induction. If it is the case that economies of density mean that two firms cannot both profitably serve the area as a COLR, then the winning bidding, by not withdrawing, can count on the second-lowest bidder to withdraw and therefore have the market to herself.

While theoretically correct, this is obviously a risky strategy. The winning bidder has to count on the other person to save the two of them by withdrawing from the market. If the second bidder, for whatever reason, makes the wrong decision, the first bidder is in trouble. Not

wanting to take that risk, the winning bidder might well withdraw. And anticipating all this, a person might well prefer to come in second so as to induce the nervous winner to withdraw.

Letting the second bidder go first has problems, too. By not withdrawing, the second bidder can put the otherwise winning bidder in an untenable position and effectively force her to withdraw.

Our solution to this quandary is to give the winning bidder an advantage that doesn't depend on withdrawing first or second. The Ameritech alternative creates an asymmetry between the multiple winning COLR bidders. The low bidder is awarded (say) 70% of the market (and 70% of the fee) and the second bidder is then given the option to get the remaining 30% of the COLR market for thirty percent of the low bid. This asymmetry accomplishes two effects. First, if there are strong economies of density, the second bidder won't want to match. Since the two bidders are never put in a symmetric position, we won't find ourselves in a position where the two of them are in a symmetric money-losing position and end up fighting a war of attrition. The second advantage of guaranteeing the winner a 70% share is that it limits her losses if there are economies of density. Going from 100% to 70% is less of a loss than going from 100% to 50%. If someone is able to make money with a 30% share, she should be able to make money with a 70% share. That's why we don't feel that we need to give the winning bidder an option to withdraw in the event a second bidder becomes a 30% COLR.

The third advantage of creating this asymmetry is that is should result in a lower subsidy cost. Quite generally, auction theory tells us under certain reasonable conditions the lowest cost subsidy will be obtained by awarding the entire market to the lowest bidder. To the extent that the low bidder does not get the full market share, bidding will be less aggressive and subsidy costs will be higher. By awarding the lowest bidders disproportionate shares, the Ameritech alternative moves in the direction of efficiency relative to a plan like GTE's which awards all COLRs the same deal.

3. TECHNICAL COMMENTS IN RESPONSE TO PROFESSOR MILGROM'S CRITIQUE.

There was clearly a misunderstanding by GTE of the alternative suggested by Ameritech in the March 14 memo, and we clear this up in our comments about auctions without economies of density. In point of fact, the Ameritech mechanism outperforms GTE's in the numerical example that GTE developed.

Let's start with the example in Professor Milgrom's 3/14 email:

"Suppose there are two potential COLRs in an area, perhaps the ILEC and a wireless entrant. To keep the arithmetic simple, let's normalize their costs of service to be zero and let's suppose the reserve price in the auction is 12."

With the Ameritech alternative, the low bidder would get 2/3 of the market and the high bidder would have the right to *match* the low bid and take 1/3 of the market. The Nash equilibrium bidding would lead to a price of zero under the Ameritech alternative, so that no subsidy would need be paid. (The misunderstanding was that the second highest bidder is only awarded a share of the market if he *matches* the lower bid.)

Under the GTE plan, then if the acceptable difference in bids was 1, as in Milgrom's example, then the Nash equilibrium bids are, as Milgrom correctly calculates, 1 and 2, and the subsidy level is 2. Therefore, in the GTE example the Ameritech alternative has lower subsidy costs.

Now consider an example in which the cost of serving an entire market is 15, but the cost of serving a third of the market is 7. In the Ameritech alternative, the Nash equilibrium is again that prices are competitive and no subsidy is paid. The firm that submits the low bid would not have to worry about being matched by a firm that would get only a third of the market. The disparities in market shares between the lowest and second lowest bidders will dramatically reduce the probability that a firm that submits the lowest bid will find itself sharing a market that it thought would only be profitable to a sole provider. The second bidder's lower share would discourage it from entering if there are economies of density and the first bidder's higher share would mitigate its loss if it is forced to share the market.

Our opinion does not constitute a formal Ameritech plan or proposal. This memo does represent the opinion of the two of us, and Ameritech is supportive of exploring how a competitive bidding mechanism may be developed. However, Ameritech has not endorsed a specific model at this time.

Jeremy Bulow and Barry Nalebuff